SMITH

AN ADDRESS DELIVERED ON THE OCCASION OF THE INAUGURATION OF THE NEW SOUTH BUILDING OF THE NEW YORK HOSPITAL

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OF THE

NEW SOUTH BUILDING

OF THE

NEW YORK HOSPITAL,

ON THE 18TH OF APRIL, 1855.

BY JOSEPH M. SMITH, M. D.,

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&C., &C.

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ADDRESS.

GENTLEMEN :

The institution and multiplication of Hospitals are among the most striking evidences of the progress of civilization, and of the benevolent and noble spirit of those engaged in their support and management. Their origin is distinctly traceable to the enlightening and humanizing influences of Christianity. Among the ancient Greeks and Romans hospitals were unknown. The poor were allowed to suffer and die under such shelters as might fall in their way. The wounded in battle had no retreat where they could collectively receive medical care. The temples were the only places where the sick congregated, not for the purpose of admission as resident patients, but for the purpose of obtaining a knowledge of the remedies which were there recorded as having been curative in cases similar to their own.

In their general character, as sources of medical relief, the temples of heathen antiquity were more nearly allied to modern dispensaries than to hospitals. It is said by a distinguished medical scholar, Professor Bartlett, in his "Discourse on the Times, Character, and Writings of Hippocrates," that "The sick who visited the temples for relief, were subjected, under religious forms, to a preparatory regimen, consisting of prolonged abstinence, or a rigorous diet, and various purifying ablutions and inunctions of the body. After these preliminaries, a night was passed in the temples, and the patients subjected to the treatment ordered by the Asclepiades. A certain number of the patients who had been cured, left in the temples votive tablets, grateful offerings to the gods, containing brief records of their diseases and their cure. Strabo says, 'the Temple of Epidaurus is always full of the sick, and of the tablets on which the treatment is inscribed; and it is the same at Cos, and at Tricca.'"

The epoch of the institution of hospitals is usually referred to the sixth century, or the reign of Justinian. They seem to have been for a long time connected with monasteries, and under the direction of those in whom were united the medical and clerical characters. But the greater number of infirmaries have arisen since the Reformation; and in many instances, the edifices now used

as hospitals were formerly conventual establishments. Hundreds of years elapsed before institutions were founded for the special and exclusive benefit of the sick and poor. Indeed, as matter of history, hospitals scarcely deserve to be mentioned before the twelfth century, in which age St. Bartholomew's, in London, was founded by Henry I., though subsequently endowed by Henry VIII., and rebuilt in the reign of George II. Of the few of any note established in the fifteenth century was Trinity Hospital, a small institution at Edinburgh. After this period the number rapidly increased. Among those which sprang up as general or special infirmaries, and which are the most celebrated and best known to us, in the sixteenth century, were St. Thomas' of London, and the enlargement of the Hotel Dieu at Paris, one of the oldest in Europe, dating back as far as the seventh century ; in the seventeeth century, were the Bethlehem, St. Louis, La Pitié, La Charité, La Salpétrière ; in the eighteenth century, St. George's, the London, Guy's, Middlesex, Lock, St. Luke's, Royal Infirmary of Edinburgh, Des Enfans Malades, and Des Vénériens. There were also many others founded in metropolitan, provincial and colonial situations ; and among these last was one in the colony and city of New York. In the present century infirmaries have so multiplied, that there are few places, especially in mar-

itime countries, having a city population, in which there is not one or more established with chartered rights, or under the management of a municipal government.

Of the history of the New York Hospital, the institution to which I have just alluded, and to which your attention is now invited, it is sufficient to say, that its charter was granted by the Earl of Dunmore, on the 13th of June, 1771 ; that its site was purchased in 1773, and the building commenced in July of the same year ; that before its completion, in 1775, it took fire and was nearly destroyed. The rebuilding was prevented by the occurrence of the American Revolution. It was occupied, however, during the war, as barracks by British and Hessian troops, and part of the time as a hospital. After the Revolution, it was re-established by the liberality of the State and private munificence ; but it was not in a condition to be used as a hospital until the 3d of January, 1791, on which day, eighteen patients were admitted. There being no suitable accommodations in the building for lunatics, a new edifice, to receive that class of patients, was erected, in 1806, on the spot occupied by this house, and was used for that purpose until 1821, when the Bloomingdale Asylum for the Insane was completed,—that extensive and magnificent branch of the Hospital of which the institution is so justly proud. In 1825,

the old edifice for lunatics was so altered as to fit it for the reception of patients suffering from ordinary diseases, and being appropriated to seamen, was denominated the "Marine Department." In 1829, the main building was improved by the extension of its wings. In 1841, the north building was erected ;* and in 1850 the interior of the main building was entirely, or for the most part, remodeled, its apartments enlarged, and many valuable improvements introduced. Lastly, in 1853, the building of the marine department was demolished ; and in its place has arisen the new and imposing edifice in which we are assembled ; and which we now, on this 18th day of April, 1855, dedicate to the humane purposes of this great corporate establishment. And here I feel assured, that this enlightened auditory will unite with me in saying to the committee under whose immediate direction the building was erected, namely, Messrs. William M. Halsted, John A. Stevens, George T. Trimble, Benjamin L. Swan, Frederick Sheldon and George Newbold, that, whilst we congratulate them on the felicitous termination of their labors, they cannot fail to receive, for what they have so faithfully done, not

* See Charter of the Society of the New-York Hospital, and the Laws relating thereto, with the By-Laws and Regulations of the Institution, and those of the Bloomingdale Asylum for the Insane—New York, 1845.

only the thanks of their colleagues in the Board of Governors, but also the applause of those by whose generous donations the work was rendered achievable.

Of those engaged in planning and constructing the edifice and its appurtenances, I may mention that the architect was Mr. William W. Gardner; the masonry was supervised by Mr. Lorenzo Moses; the carpentry by Mr. Thomas Gardner: the heating and ventilating apparatus by Messrs. Morris, Tasker & Morris; and the arrangement of the gas fixtures by Messrs. Dietz, Brothers & Co.

The earlier European hospitals were exceedingly defective in their architectural construction, their internal economy, and their hygienic management. Though originating in a spirit of benevolence, they were allowed to become the receptacles of human pollution, and the centres of infectious pestilence. Overcrowding, uncleanliness, and want of ventilation, combined their powers to destroy those who entered them as patients, or who lived in their immediate neighborhood. We are told, that "the Hotel Dieu of Paris previously to its reformation, was the grave of the sick poor of that metropolis. Hence a general outcry was raised against infirmaries. It seemed dangerous to go near them, and the conclusion at one time appeared plausible that they ought to be abolished." Such a state of things

sprang from ignorance, or a disregard of the principles of public and private hygiene. The danger of overcrowding was not fully apprehended, the importance of cleanliness not rightly estimated, and the philosophy of ventilation not understood. To detect the existence of these evils in hospitals, as well as in prisons, and to spread a knowledge of them over the countries of Europe, with a view to their correction, was the noblest work of philanthropy in the last century, a work performed by the immortal Howard.

It has required the whole time from the period of the origin of hospitals to the present day, to discover the principles and contrive the means by which the evils referred to have been removed, and the wards of hospitals rendered as pure and harmless as the commodious chambers of the opulent. It would be interesting to trace out the order of the improvements in science and art which have led to this happy result. But our limits will admit of no enlargement on the subject, beyond a notice of one or two of its topics.

The mischiefs generated in the older hospitals, and which are still liable to occur, were typhus, or, as it is called when it originates in an infirmary, hospital fever, erysipelas, hospital sore or gangrene, puerperal fever and a general typhoid condition of those suffering under various forms of disease. In studying the sources of these evils it

was discovered that they were mainly due to an infectious principle or poison diffused in the atmosphere of hospitals. The removal of the urine and fæces of the patients from the apartments was not sufficient to preserve their purity. The chief source of the poison was ascertained to be the emanations from the lungs and skin ; and that the mere washing of the floors and bedding and clothing was of secondary importance, compared with ventilation, the first and most essential prophylactic of the maladies originating in hospitals.

In order to impress this truth on the mind of the medical public, I endeavored, in a report on Public Hygiene, made to the American Medical Association, at its meeting in Cincinnati, in 1852, to present it in a point of view, in relation to human exhalations, in which it had not been previously examined. And here, perhaps, I may be permitted to state the mode in which I studied the subject, and to show its application to the hygienic economy of this institution.

As the infectious atmosphere of hospitals, ships, jails and the squalid habitations of the poor originates, as there is good reason to believe, from human exhalations and defective ventilation, it becomes a question of importance to ascertain the amount of such exhalations from given numbers of individuals in given spaces of time. By an elaborate and careful investigation, it has been

determined that the daily discharge of matter from the lungs and skin, is greater than that from the bowels and bladder.

The average amount exhaled from the lungs and skin of a healthy adult, of ordinary size, in twenty-four hours, is about 40 oz. ; and of this quantity about 10 dwt. consist of animal matter. With these data, it is easy to calculate the amount of effete matter eliminated from the pulmonary and cutaneous surfaces, in specified periods, by the number of inmates which this edifice is intended to accommodate. In making such a calculation, it is assumed, that the amounts emitted by the sick and healthy adult persons do not materially vary. If the number of patients in this building be 200, then the total amount of pulmonary and cutaneous exhalations, will be in one day 666 lbs., 8 oz. ; in one month or 30 days 20,000 lbs. ; and in one year or 365 days 243,334 lbs., 4 oz. ; and the amount of animal or organic matter in these exhalations will be in one day 8 lbs., 4 oz. ; in one month 250 lbs. ; and in one year 3,041 lbs., 8 oz. A similar calculation made in relation to the 500 patients which the three buildings on these grounds are designed to accommodate will show a total amount in one day of 1,666 lbs., 8 oz. ; in one month of 50,000 lbs. ; and in one year of 608,333 lbs., 4 oz. ; and of animal matter in the first of these periods 20 lbs., 10 oz. ; in the se-

cond 625 lbs.; and in the third 7,604 lbs., 2 oz. Such estimates enable us to judge of the degree of liability of disease originating in ill ventilated or overcrowded human habitations.

Among the principles eliminated from the lungs in considerable, though variable quantity, is carbonic acid gas. "According to Scharling," as stated by Professor Lehmann, "a very powerful adult man exhales in twenty-four hours 867 grammes," or, at a temperature of 32° and the barometer at 29,84 inches, about 27,058 cubic inches.* Air once breathed is unfitted for the purpose of respiration, for the reason that its normal quantity of oxygen is diminished, and that of its carbonic acid gas increased. Vierordt estimates the mean quantity of carbonic acid in expired air at upwards of four per cent.† It seems well established by the experiments of Dr. Snow, "that five or six per cent. of carbonic acid cannot exist in the atmosphere respired by man, without danger to life; and that less than half of this amount will soon be fatal,

* See Physiological Chemistry, Vol. III, page 335, 1854—Works of the Cavendish Society.

† Ibid.

"The air of an easy expiration," says Professor Graham, "amounts to fifteen or eighteen cubic inches, and contains about 3½ per cent. of carbonic acid. The air of a deep expiration contains 6 or 8 per cent. of that gas, and will not support the combustion of a candle. According to Mr. Coathupe, the quantity of air which passes through the lungs of a man of ordinary size, in twenty-four hours, is 266⅔ cubic feet, of which 20⅔ cubic feet are changed into carbonic acid.—*Elements of Chemistry*, 1843.

when it is formed at the expense of the oxygen of the air."*

Air which has not been respired, and which is surcharged with this gas in the proportion of ten per cent., is destructive to those who breathe it.

But though the atmosphere loses by respiration a portion of its oxygen, and acquires an excess of carbonic acid, and is thus rendered noxious to persons in health, and especially so to persons in disease, it is doubtless from the materials which escape from the body through the skin, and from certain effete matters thrown off, with the carbonic acid, from the lungs, that hospital infection takes its origin. The intestinal and renal evacuations are usually promptly removed from the apartments of the sick; and consequently the emanations from them can add but a trivial amount to the impurity of the air. And, moreover, it is probably the animal matter present in the exhalations from the lungs and skin which, being in the form of vapor, and not possessing the peculiar diffusive property of carbonic acid and other gases, is retained in the air, and metamorphosed into an aerial poison or miasm, which may attach itself to the clothing and bodies of the patients, and also to the walls, ceilings, floors and furniture of the wards in which it occurs. In this mode of viewing the subject, it is evident, that

* Carpenter's Physiology.

ventilation is a cardinal, and in fact the only means of maintaining a sanitary condition in buildings appropriated to the reception of the sick. Better leave the clothing and bedding of the patients, soiled by urine and fæces, unwashed, than suffer the air of an infirmary to remain unchanged. Foulness of sheets and blankets is bad, but a mephitic and stagnant atmosphere is worse. The visible filth of bedding and floors is not the most fertile source of infection in hospitals. The invisible matter issuing from the body in the form of vapor is chargeable substantially with the poisoning of the atmosphere. To the eye every thing in a hospital may appear clean and pure, whilst, at the same time, a deadly principle infects the air. Such a cause of disease can only be avoided by a system of thorough ventilation.

It is here deserving of special notice, that the Governors of this Institution appear to have been fully aware of the danger of disease originating within its walls from overcrowding, and accumulation of human effluvia. The occurrence of erysipelas in its wards has especially, from time to time, arrested their attention. In evidence of their desire and determination to avoid the prevalence of that disease, I shall take the liberty to refer to what was done in relation to the subject about 19 years ago. In doing this, I may perhaps revive the memory of a document which may

have been forgotten by some of those engaged in preparing it, and of which the existence is not generally known. I allude to the Report of a Committee of the Governors, with the opinions of the physicians and surgeons in relation to erysipelas, presented to the Board of Governors in April, 1836, and of which a few copies were printed for the use of that body. The Committee, consisting of Messrs. Isaac Carow, John A. Stevens, John R. Murray, and George Newbold, were charged with the duty of inquiring into the causes of the prevalence of erysipelas in the hospital and the means of preventing its recurrence in the house.

In entering on their inquiry, the Committee addressed to each of the physicians and surgeons of the hospital a series of questions pertinent to the subject. To these questions the physicians, Drs. Johnson, Beck, Delafield and the speaker: and the surgeons (excepting Dr. Mott, then in Europe,) Drs. Stevens, Cheeseman and Rodgers, severally returned written answers, communicating their opinions, which were remarkably concurrent on every important point, and which were substantially embodied by the Committee in their Report to the Board of Governors. After noticing some of the predisposing causes of the disease the Committee remark, "The other, and generally, if not always, the immediate, and certainly

the most fruitful source of this disease in this institution is the vitiated or infectious air, engendered in the wards themselves. All the opinions, derived from the inquiries of the Committee, agree on this point, and it is set forth with more or less earnestness in every answer; and to this conclusion, it appears to the Committee, every unprejudiced inquirer must certainly arrive.—Hence the greater prevalence in the winter and spring months, when external air is excluded, over the summer months, when ventilation is much more thorough. Hence, in part at least, its more frequent occurrence in the surgical wards; where open wounds, burns, foul ulcers, abscesses, and similar maladies add greatly to the impure air which the patients inspire; the more helpless state of such patients contributes also to the mass of personal impurities. Hence its breaking out in the crowded wards, whilst those wards that are not crowded escape entirely or are generally exempt. The very means that are effectual to arrest its progress, points clearly to its origin, and the causes of its prevalence; they are the use of disinfecting agents, vacating the infected ward, thoroughly cleansing and ventilating it, and removal, for the time, of the sufferers to open and less crowded apartments; means which never fail of success. These measures, if in constant operation, would as certainly prevent the prevalence of

the disease in an endemic form. Individual cases would be brought into the house, or might originate in it; but it is the opinion of the Committee, that the disease would be no more likely to spread without the existence of an infected air, the medium of its transmission, than it would among similar patients in private dwellings. The Committee do not intend to enter into the vexed question of contagion or non-contagion, infection or non-infection; it is sufficient for their practical purposes, that all agree, that it is not contagious or infectious or communicable but in a vitiated atmosphere, and not one of the replies of the physicians and surgeons contemplates the exclusion of any erysipelatous patient from the hospital, from fear of its personal communicability in the sense in which small pox, measles or similar diseases are communicable."

This report, so ably drawn up, was adopted by the board; and its aim has at no time since been lost sight of. It called forth every appliance suited to prevent the recurrence of the disease; and doubtless had an influence in awakening the Governors to a sense of the importance of introducing in the reconstruction of the interior of the main building, in 1850, and in the interior arrangements of this edifice, every modern improvement in the architecture of hospital and other humane institutions. The means of ventilation are here so am-

ple, that should infectious diseases show themselves they will be due either to gross negligence in the use of those means, or to the equally pernicious error of overcrowding the apartments. The number of patients in a ward is in excess whenever the daily supply of fresh air for each is not from 800 to 1000 cubic feet.

The same feeling which prompted the inquiry into the causes of erysipelas has induced the Governors to cautiously guard against the occurrence and prevalence of typhus fever. It is well known that this disease furnishes exhalations, from the lungs and skin, which rapidly become infectious in overcrowded apartments. The great number of emigrants and seamen, laboring under that form of the disease denominated ship fever, admitted into the house in 1847, and afterwards for several successive years, produced a pestiferous condition of the wards, which was attended by the most lamentable occurrences. The disease attacked several of the nurses, assistant medical officers, patients, and persons employed in cleansing the wards, and of whom, in each class, one or more died.

To prevent, in future, perils of this sort to the ordinary inmates, and to restore the wards to their former salubrity, the Governors adopted the most efficient measures. On the 2d of March, 1852, it was Resolved "that cases of ship or typhus fever

be not hereafter received, until the further ordering of this board." Such are the precautions which have been taken to prevent the generation of infectious diseases in the house ; and the public may rest assured that, though surrounded by a dense population, no danger exists of the recurrence of the evils which have been mentioned, or of infectious disorders emanating from the institution.

In making these statements, I may have awakened the expectation, that my remarks on this occasion will of course, in part, relate to the architectural and hygienic arrangements which render this hospital a safe and wholesome asylum for the sick. From the discussion of such topics, however, I feel myself excused, in consequence of that labor having been ably and substantially performed by my friend and colleague, Dr. John Watson, in his Discourse on "Thermal Ventilation, and other Sanitary Improvements, applicable to Public Buildings," and especially adopted in remodeling the interior of the main building of the Hospital, in 1850, and in the construction of this edifice. This Discourse was delivered in the theatre of the house on Feb. 8th, 1851; and, being printed, will be a durable memorial of the intelligence and talent which produced it.* There is, it is believed, nowhere to be seen economical arrangements

* See Appendix.

superior to those made in this building, and in the other edifices of this institution, for the accommodation of those who are proper objects of admission into its wards.

It is here the victims of casualty and disease, the mariner, tradesman, laborer, artisan, and servant, the destitute stranger, and the poor of every class and denomination, under certain regulations in respect to the nature of their diseases and their pecuniary means, are received and provided with every comfort ; and, if medical skill be available, their wounds healed and their maladies cured.

The pay received from patients, as stated in the last annual Report of the Governors to the Legislature, "whether seamen paid for from the U. S. Hospital money, or others paid for from their own means, or by the aid of friends or of friendly societies, is placed at the lowest rate, that will meet the ordinary average actual cost of patients, without any allowance for the use of buildings, or for medical and surgical attendance." "About one-third are received gratuitously."

The number of patients treated in the hospital during the last year was 3680. Of this number 373 died. Among the deaths were 156, from casualties, and which occurred shortly after the admission of the cases to the house. Deducting these, the deaths were 217 out of 3,524 patients. "Thus the practice of the house," as

the Governors say in their report, "presents the following results:—Of the whole number under actual treatment during the year, a little less than $6\frac{15}{100}$ per cent. died ; or, taking the ratio of mortality upon all discharged, (as is done in some statistics of this nature,) a little above $6\frac{33}{100}$ per cent. died. The amount of cures out of the number under treatment shows a proportion of a very small fraction less than 67·80 per cent. discharged cured, exclusive of 491, (or above 14·25 per cent. more) discharged as relieved for the time."

Thus far we have looked upon hospitals merely as great charities, fulfilling the design of giving shelter and relief to the sick ; but there is another aspect in which they may be regarded,—I refer to their immediate connection with the interests of the medical profession and the public at large.

It is obvious that infirmaries could not accomplish their benevolent purposes without the direct and efficient co-operation and services of those who have been educated in the practice of the healing art. Medical men, so far as the conferring of the benefits of medical treatment in hospitals is concerned, constitute the head and front of such institutions. Nor have they been backward in assuming that relation, and, in many instances, in contributing substantially to their support.

The only remuneration of physicians and surgeons for their hospital services, besides the

honor and pleasure derived from the act of relieving human suffering, is, in most instances, the advantages of a large experience in the treatment of many forms of disease, and the opportunity of advancing the science and improving the art of medicine.

Very many, if not the greater number of physicians and surgeons who have prominently flourished, since the Reformation, have occupied official positions in metropolitan infirmaries; and with some exceptions the most valuable additions to practical medicine and surgery have been made in those institutions. Hospitals, therefore, may be said to be medical schools of the highest order—medical gymnasia where physicians and surgeons, as teachers, exercise their noblest powers in struggling with, and averting the fatal assaults of disease; and where pupils are trained and prepared to join the ranks of those in the world whose duty and privilege it is to combat the worst enemies of human comfort, and to secure to all the blessing of "*mens sana in corpore sano.*"

These remarks naturally suggest the inquiry, whether this hospital has fulfilled its purpose in relation to the interests of medicine? Has it originated new, or improved the old methods of treating medical and surgical diseases? Has it formed a character which should belong to the first hospital in the commercial metropolis of

America, and in the third city, in point of population, in Christendom? To answer these questions fully and satisfactorily would require more research than has been practicable within the limited time allowed for the preparation of this discourse. Enough, however, is within our immediate reach to demonstrate that, though distant as is this hospital from the medical centres of Europe, to which in its earlier years it looked for instruction, it has in later times reflected back to those centres, lessons of practical wisdom, deduced from observation and original induction; and that its medical officers, with the spirit characteristic of Americans, have acquired an independence in thinking and acting for themselves.

Among its former physicians and surgeons were men eminently distinguished for their varied and extensive knowledge, their acute power of discrimination and medical tact. The contributions of not a few of them to the literature and practice of medicine were duly appreciated in their own times, and will long endure to shed lustre on their names.

It will be to the future historian of this institution a grateful task to estimate the positive and comparative merits of those who have acquired renown in this field of labor. Without any design to enter into an investigation of this sort, I shall merely glance at some of the more prominent

professional achievements of which the registers of this hospital afford numerous instances, and of which it may be justly proud.

The more striking examples of rare and original modes of practice have occurred in the department of surgery. There has been no case admitted into the house, warranting and requiring an operation, however formidable, which has not here found a surgeon qualified by his knowledge, his eye and heart and hand, for its performance. Operations, of which there were few or no precedents, and so unpromising in their results, as scarcely to justify their performance or repetition, have been executed with a skill that elevated the operator to the level of those enjoying the highest European reputation.

The first repetition, and with a favorable result, on this side of the Atlantic, of the bold, original, and successful operation of Sir Astley Cooper, of tying the common carotid artery for aneurism, performed by that celebrated surgeon, in 1807, was, in this hospital, on the 7th of January, 1813, by the late Dr. Wright Post. The case is recorded with great minuteness of detail in the fourth volume of the American Medical and Philosophical Register, published in this city, in 1814, and is the more interesting, as it contributed to establish certain physiological and practical principles of the highest interest. The same distinguished

anatomist and surgeon, in 1817, tied the right subclavian artery, for brachial aneurism, above the clavicle. The case recovered, and was the first of the kind in which that operation had been successful.* In these, as well as in all the various operations of Dr. Post, his accurate knowledge, his correct judgment, his deliberate, cautious and delicate manner, were striking to every observer, and won for him a position more exalted in the profession, than any one since his death has had the good fortune exclusively to occupy.

In the same wards and the same theatre of this hospital in which Dr. Post acquired his never fading laurels, Dr. Mott, now one of the most eminent of living medical men, commenced his brilliant career in the walks of surgery.

To the *tactus eruditus* and dexterous skill of his distinguished contemporary, he has added the rare merit of originality in operative surgery. In this remark I feel myself warranted by his operation on the arteria innominata. The subject of the case was a man, aged 57, a native American, and by occupation a seaman. He was admitted into the hospital on the 1st of March, 1818, 37 years ago. The operation was performed on the 11th of the following May, and consisted in securing in a ligature the arteria innominata, for aneurism,

* See Transactions of the Physico-Medical Society of New-York, Vol. I, 1817.

and was the first ever performed for that affection. Though the patient eventually died from the consequences of the disease, the operation afforded a precedent which has been followed by other surgeons, and which will ever be associated with the name of Mott, and the institution in which it was performed. In concluding his reflections on the case, Dr. Mott says "the practicability and propriety of the operation appear to me to be satisfactorily established by this case: and although I feel a regret, that none know who have not performed surgical operations, in the fatal termination of it, and especially after the high and just expectations of recovery which it exhibited; yet I am happy in the reflection, as it is the only time it has ever been performed, that it is the bearer of a message to surgery, containing new and important results."

There are other examples, in the practice of this hospital, on record, which have been regarded as brilliant triumphs in operative surgery. Of these the one which, perhaps, in point of originality and mode of execution, has not been surpassed, is that of the late Dr. John Kearny Rodgers, in which the left subclavian artery was tied, for aneurism, on the inner side of the scaleni muscles. This operation was performed on the 14th of October, 1845, and was witnessed by a crowd of his professional brethren with profound interest; and

its successful completion, at the time, and its subsequent history, notwithstanding the death of the patient, on the 15th day after the operation, placed the operator in the foremost rank of modern surgeons.* The talent and ingenuity of Dr. Rodgers was also displayed in first suggesting and using wire, after White's operation, for ununited fractures, as a means of keeping the ends of the bones in apposition, a mode of treatment since adopted by eminent practitioners.†

It will be observed, in what I have said concerning important contributions to surgery, that I have confined myself to a notice of such of them as have been made by those whose days of labor in this institution have passed away. Of the qualifications of the medical officers in active service at the present time, and of what they have done to advance the healing art, and elevate the character of the institution, it would not become me to speak as freely as I might, were I in a different position, and unfettered by the restraints with which their presence surround me. But while I leave to others to recount whatever they have done in the way of improvements in operative or medical

* The attempt of Sir Astley Cooper, the first ever made, to tie the left subclavian artery within the scaleni muscles, is said by Dr. Mott to have failed "*for want of the improved American artery instruments.*" (*Travels in Europe and the East;* 1842, p. 21.)

† See Biographical Sketch of J. Kearny Rodgers, M. D., by Edward Delafield, M. D. New York, 1852.

surgery, I am sure my colleagues will neither impute to me partiality, nor regard their associate with jealousy, if I venture to refer to the successful introduction of scarification as a means of relief in cases of œdematous laryngitis, by Dr. Gurdon Buck. Though this mode of treatment had been previously suggested and practiced by Lisfranc, the idea of it seems to have been equally original with Dr. Buck; and it is to him is justly due the honor of being the chief founder of the practice. Several of the first cases in which he operated, occurred in the wards of this hospital, in 1847 and 1848; and the history of them, together with drawings illustrating the forms of the disease, and the instruments used in the operation, were presented to the American Medical Association, at Baltimore, in May, 1848, and were published in the first volume of its Transactions. The operation has now taken a place among the resources of art in the management of a formidable disease.

But I must not forget to turn your attention for a moment from the surgical to the medical department of the house. In this latter division, there are no salient and dazzling points of practice, which captivate the beholder, and tend to aggrandize the institution. Such things spring from the handicraft of the surgeon. In the medical wards there is nothing which specially exposes itself to the gaze of curiosity, or demands striking

remedial manipulations. The labor, performed here, consists in the quiet study of diagnosis, the careful observation of the internal processes of disease, the unostentatious application of remedies, and the prescription of diet and regimen. The qualifications needed to discharge these medical duties, it will, I doubt not, be generously allowed, are quite equal to those required in the service of the surgical wards.

Among the names which are inseparably associated with the foundation of this hospital, are those of Drs. Bard, Middleton, Jones, and Treat; men not less distinguished in their day for learning, experience, and liberality, than those who have followed them, in a long succession, in the places they here once occupied.

It would not accord with my purpose on this occasion to dilate on the kind and extent of labors performed by the medical men, who have served the institution in the capacity of physicians. The works of Dr. Edward Miller, who was declared by Dr. Rush to be second to no physician in our country, and of Dr. Hosack, the erudite and eloquent teacher of medicine, are alone sufficient, to illustrate the character of the men whom the Governors have ever aimed to secure the services of, and to honor.

But while the physicians have not participated in the imposing operations performed in the the-

atre, they have, from time to time, united with their surgical colleagues in giving regular courses of instruction in clinical medicine and surgery. It is in labors of this sort, that a great amount of practical knowledge has been diffused among medical students, and the younger members of the profession. The modes of instruction have been oral communications to the pupils, gathered at the bedside, or prelections delivered in the lecture room or theatre, and, in some instances, subsequently widely circulated by the press. As examples of the latter mode of teaching, I may mention the admirable clinical lectures of Dr. Alexander H. Stevens on the Primary Treatment of Injuries, and on Lithotomy, the former published in 1837, and the latter in 1838.

I must also notice another and more elaborate course of instruction, given by one of the most talented physicians our country has produced. I refer to the series of clinical lectures on the Diseases of the Chest, delivered extempore, by the late and lamented Dr. John A. Swett, to the class of students attending the hospital about ten years since ; and reported in the New-York Lancet, by its editor, the late Dr. Houston. These lectures were subsequently revised by their author and reproduced, in 1852, in a volume of 585 pages ;—a work which should be studied by every medical pupil, and which should adorn every medical li-

brary. Though more recently, Dr. Swett, without dissolving his connection with this institution, exercised his talents, for a brief period, in giving systematic courses of instruction in another sphere, yet his fame will ever mainly repose on the reputation he here established as a teacher of medicine. I would fain pronounce his praise, but justice demands for him an abler eulogist.

There is still another mode in which a former medical corps of the house, or rather several of them, joined in communicating to the public, the results of their observations and inquiries. The plan was that of making a selection from the facts and cases, coming under their observation in the hospital, and publishing them, in the book form, with such remarks and reflections, as might heighten their interest. There is, however, but a solitary volume of this kind ; and that bears the title of the "Medical and Surgical Register, consisting chiefly of cases in the New-York Hospital ;" but it is one which occupies a respectable place among the printed contributions which the institution has made to medicine. The gentlemen engaged in preparing and publishing it were Drs. John Watts, Jr., Valentine Mott, and Alexander H. Stevens. The volume comprises upwards of 400 pages, and appeared in two parts, the first in 1818, and the second in 1820. The initiatory paper is by Dr. Mott, and relates to the case already

referred to, in which he secured in a ligature, the arteria innominata. It also contains a very able and elaborate account of the yellow fever, which appeared in various parts of the United States, during the summer and autumn of 1819. Though less extensive, the work compares favorably with the Dublin and Guy's Hospital Reports.

Now, if to the various modes, I have noticed, of diffusing the medical knowledge, derived from this field of study, be added, that of publishing in the medical journals, cases, and monographs, based on facts observed in the hospital; and if the materials thus spread before the medical profession, be duly summed up and weighed, there will, I think, be no reason to blush in presenting the aggregate, as a response to the questions before propounded, whether this institution has fulfilled its purpose in relation to the interests of medical science? or, whether it has originated new, or improved the old methods of treating human maladies? We leave to others to say, if such an answer be not full and triumphant.

But the enumeration of the benefits which this institution confers on the profession, and through it on the public at large, would be incomplete, were I to omit to mention the advantages afforded by the means of illustrating the various forms of organic disease by casts, and specimens taken from the dead body, collected in the cabinet of morbid

anatomy ; or, were I to neglect to direct your attention to the treasures of medical literature accumulated in the library.

The cabinet contains preparations of great rarity and value ; and though recently instituted, and comparatively small, there is good reason to believe, that it will not cease to enlarge, so long as the medical incumbents of the Hospital shall be animated by that stern philosophical spirit of the age, which demands that every doctrine or inquiry in medical and natural science, shall be, as far as possible, sustained by ocular and exact demonstrations.

The library is nearly coeval with the institution of the Hospital. In its earliest years it was enriched by the donation of books by medical men ; and by the appropriation of money for the purchase of books by the Board of Governors. The funds disbursed for its enlargement have for many years past been derived chiefly from the fees paid by medical students for tickets of admission to witness the practice of the house, and for the use of the books here collected. It comprises upwards of 5,800 volumes, embracing works of the highest value in medicine and the collateral sciences. It is, indeed, a fountain of knowledge from which the junior of the profession may imbibe the elements of sound medical learning, and the veteran practitioner refresh himself with draughts of an-

cient and modern medical lore,—a fountain suited to every variety of professional taste, and which is gradually enlarging by accessions flowing into it from the tributaries of medical observation and research.

And now it remains that we review these grounds, these buildings, and these apartments, so spacious and commodious, and so admirable in all their appointments for hospital purposes; that we regard them as constituting a model infirmary, embracing every improvement suggested by science and effected by art in the course of a thousand years; and that we contemplate them as the exponent of the most unexceptionable and beneficent form in which philanthropy displays itself in a Christian country. But while I call your attention to these things, I should fail to present the higher claims which this institution has to the respect and confidence of the community, were I not to advert to the character and social position of those in whose hands is the management of its immediate and various concerns. On reviewing the names of the Governors from the foundation of the Hospital, it will be perceived that they have been gentlemen, known and acknowledged to be alike distinguished for their personal worth, their practical wisdom, their bounteous liberality and spirited benevolence. The devotion of not a few of them to the performance of their self-imposed

duties has been extended over a long succession of years, reaching in some instances to periods of more than a third, and nearly half a century. I shall I trust, be pardoned, if I err, in the freedom I take on this occasion of designating the individuals to whom I especially refer. The first entitled to notice in the order of seniority of membership in the board of Governors of the past year, is George Newbold, Esq., who has been one of that body for 46 years, and president of the same since 1833. The second is Najah Taylor, Esq., who has been connected with the board 45 years, and who for several years was its vice-president. The third is Robert I. Murray, Esq., who has been a member for 39 years, and has occupied the office of secretary since 1824. The fourth is John Adams, Esq., whose term of service extended through the period of 36 years, and who ably and faithfully discharged the duties of treasurer of the institution, during nearly the whole of that time, resigning his seat in the board in June last. The fifth and last is Benjamin W. Rogers, Esq., whose connection with the board commenced with that of the Governor last mentioned, namely, in 1818, and who for four years filled the place of assistant treasurer, an office long since abolished.

These venerable men are crowning their days with acts of charity that will not soon be forgot-

ten ; and I must add, that their honored associates in the board, though younger, but not more zealous, give assurance that they too will mark their latest years with works of benevolence alike deserving of commemoration.

Finally, in all we see around us, are recognized the propitious influences of a pure religious principle working in the hearts of those presiding over the institution, and of those of their fellow citizens who have contributed to its enlargement. Let them remember, and all who may come after them, and would imitate their noble benefactions, that whatever of their time, labor and substance is bestowed on asylums for the sick and destitute, falls within the circle of charities implied in the proverbial declarations of Scripture, "He that hath pity upon the poor, lendeth unto the Lord ; and that which he hath given will he pay him again." "He that giveth unto the poor shall not lack." And let those who here exercise their skill in the healing art, remember the saying of the illustrious Boerhaave, "that the poor were his best patients, because God was their paymaster."

APPENDIX.

DESCRIPTION OF THE NEW SOUTH BUILDING OF THE NEW YORK HOSPITAL,

BY JOHN WATSON, M. D.,

SURGEON OF THE HOSPITAL.

The spacious and commodious stone edifice recently erected on the grounds of the New York Hospital, covers a space of 128 feet from east to west, by 90 feet from north to south; ranging parallel with Duane Street, and receding westward, from the main or central building of the hospital, to within 30 feet of Church Street. Its elevation from the foundation, four feet below the surface of the ground, to the peak of its roof, is about equal to its width. The roof has a pitch of 12 feet, and the perpendicular walls in front and rear, from the surface of the ground to the top of the cornice, are about 74 feet high; and the gable ends, rising to the top of the roof, are equal to the upmost elevation of the roof itself. The platform upon which the building rests has been leveled out of the side of a hill with a rapid declivity towards the south and west, so that the embankment at the north and east, at its highest point, is about 12 feet above the surface of this platform. This embankment, sloping off to the south and west, is faced, at its highest level, with a perpendicular wall of cut stone; but where less abrupt, it is sloped off gradually and covered with green sward. There is an area, or open interspace between the embankment and the outer walls of the building, of from 4 to 8 feet wide; so that light and air have free access to the sub-basement, or foundation story, as well as to the four sto-

ries above this, on every side. The building consists of two projecting wings and an intermediate or central portion. The wings, above the foundation story, are the parts more especially intended for the wards of the sick. Measured from without, in the principal story, they are in length, from north to south, 88 feet; and in width, from east to west, 47 feet 4 inches. They project, both in front and rear, about 12 feet beyond the perpendicular walls of the central portion. This latter is about 66 feet deep from north to south, by 33 feet 4 inches from wing to wing; and is occupied with the several small rooms of the resident medical officers and assistant superintendent, with the principal entrance or vestibule, with spacious halls ten feet wide, with the principal stairway; and in the uppermost story, with the surgical amphitheatre and small apartments connected with it. The sub-basement or foundation story, is wholly above ground on two sides, and partly so on the other sides, and is well aired and lighted on every side. It is 10 feet high from floor to ceiling, traversed from east to west by a wide hall, and crossed at three points by lobbies, one in each wing, and one in the centre. On this floor are eight air chambers, for the accommodation of the heating and ventilating apparatus; and numerous offices and small apartments for the use of the servants and laboring people about the premises. The access to this story from without is by a door at either end of the principal hall; and it communicates with the story above it by the principal stairway in the centre. The basement, or the story affording the principal entrance, is 14 feet high from floor to ceiling, and is traversed through its whole length by a hall 10 feet wide. It is approached by the principal entrance in the centre on the north side, not more than two steps above the level of the open space in front; and by two doors at either extremity of the great hall east and west. The principal stairway on the south of this hall is opposite the central entrance, with which it communicates through the vestibule. But there are also other stairways, one in each wing, ascending from this floor to the uppermost story. These smaller stairways are

constructed of iron, and are intended to furnish safe escape from the several wards in case of fire or panic, as well as to give privacy to the wards, and relieve the centre of the building from noise and bustle. The wards for the sick in this floor are four in number, each about 27 by 38 feet; and, like the larger wards above, are furnished with all the requisite offices and appurtenances. Each of the three stories above the basement is in height, from floor to ceiling, 15 feet. On these are all the principal wards.

Each of these wards consists of—1st. An infirmary or sick room, intended to accommodate about 30 patients, and measuring within the walls 84 by 27 feet 2d. A nurses' room, of sufficient size for two nurses, (the number assigned to every ward.) 3d. A refectory, or eating room, with its requisite appliances, dumb-waiter, cupboard, sink, &c. 4th. A common room, in which are ranges of drawers for the clothing of the patients and the furniture of the sick room, when out of use. Each patient has here a separate drawer in which his own clothing is kept. This room is also to be used as a retiring room for conversation, and for the recreation of convalescents. 5th. A small spare room for the seclusion of special cases. 6th. A transept or recess, 10 feet wide, on the side opposite the door which opens upon the central hall. Communicating directly with this recess, and through it, with the sick room, are, on one side, 7th. the water-closet and bath-room; and on the other side, 8th. the door leading to the private stairway already mentioned. Each ward is lighted on every side by spacious windows reaching to the floor; but the ventilating arrangements are independent of these, and are, perhaps, even more efficient in the winter time, while the windows and doors are shut, than when the steam is off, and all the windows are open to the air, in the summer season. Such at least, is the fact in the main hospital edifice, within which this improved system of heating and ventilation has been in operation now for several years, and in which the patients suffer less from

erysipelas and other depressing maladies from impure air, in winter than in summer.

The fresh air, when the windows and doors are closed, is introduced from without through two upright shafts, each at the distance of twenty-six feet from the house—one opposite its eastern, and the other opposite its western entrance. Passing downwards through each of these shafts, by an opening of 4 feet 4 inches square, the air enters a horizontal continuation of this opening, and is conducted through this, onwards several feet beneath the surface and parallel with the main hall, towards the central portion of the building; and reaching, in this course, the smaller conduits in communication with the air chambers, it enters these through openings in the floor; and here, exposed to coils of steam-pipe, it receives the requisite temperature in the chambers, and is allowed to escape upwards by separate flues for each point of destination, into the wards or other apartments of the building. Each of the principal wards receives through the wall, near the floor, fresh air by four flues, which are constantly open, and regulated by registers wholly beyond the control of the patients. The foul air of the wards and other apartments, is carried off by upward currents through the chimneys to the open air, by special foul-air flues, which communicate with open belfreys in the attic. Of these belfreys or cupolas there are four, two to each wing; and through these an upward current is constantly secured by coils of heated steam pipe placed within them, and which can be kept in operation winter and summer, independent of the apparatus for warming the house. In each of the large wards there are two wide chimneys—one at either end, and from thirteen to fifteen special foul-air flues ranging lengthwise along the sides of the ward, with registers at top and bottom alternately. There is also a smoke-flue for each of the air-chambers, so that stoves or other heating apparatus may be used, if the present plan should be abandoned.

The following table gives the internal diameter in inches, and the length in feet, of iron tubes used in the economy of the house,

for drainage, for the supply of water, for gas, and for the heating and ventilating apparatus:

Diameter	¼	½	¾	1	1¼	1½	2	2½	3	3½	4 in.
Length,	111	531	16,821	11.677	810	1499	1045	161	62	52	156 ft.

The length of steam pipe in the eight air chambers alone, including bends, is equal to about 29,250 feet of ¾ inch tube,—supplying about five lineal feet of such tube for every hundred cubic feet of space within the building to be heated, making due allowance for waste of heat through windows and doors, as well as for the unremitting process of ventilation.

The water-closets are ventilated by a downward current. There are no traps connected with the seats, but the air, descending with the soil and foul water, is drawn off at a point just above the bottom of the perpendicular soil shafts, and conducted horizontally under ground, through iron pipes, till it reaches the smoke-shaft coming from the furnace room, into which it enters, and, together with the smoke and heated gases of the furnace, is carried off through the high chimney of the main building. The liquid soil, separated from the current of descending air, after reaching the ground, passes through a trap which prevents regurgitation, and is thence conducted under ground to the public sewer in Duane Street.

The whole building will accommodate from 240 to 250 patients, affording each of these not less than a thousand feet of cubic space, and a circulating current of air, when the ventilating apparatus is in operation, of not less than half a mile an hour; and on an average probably three or four times that amount. Among the labor-saving contrivances not to be overlooked, and beyond those already mentioned, are:—1st, speaking tubes communicating with each of the wards; 2d, a descent-shaft for the passage of clothing, bedding, &c., from the wards to the ground floor, or

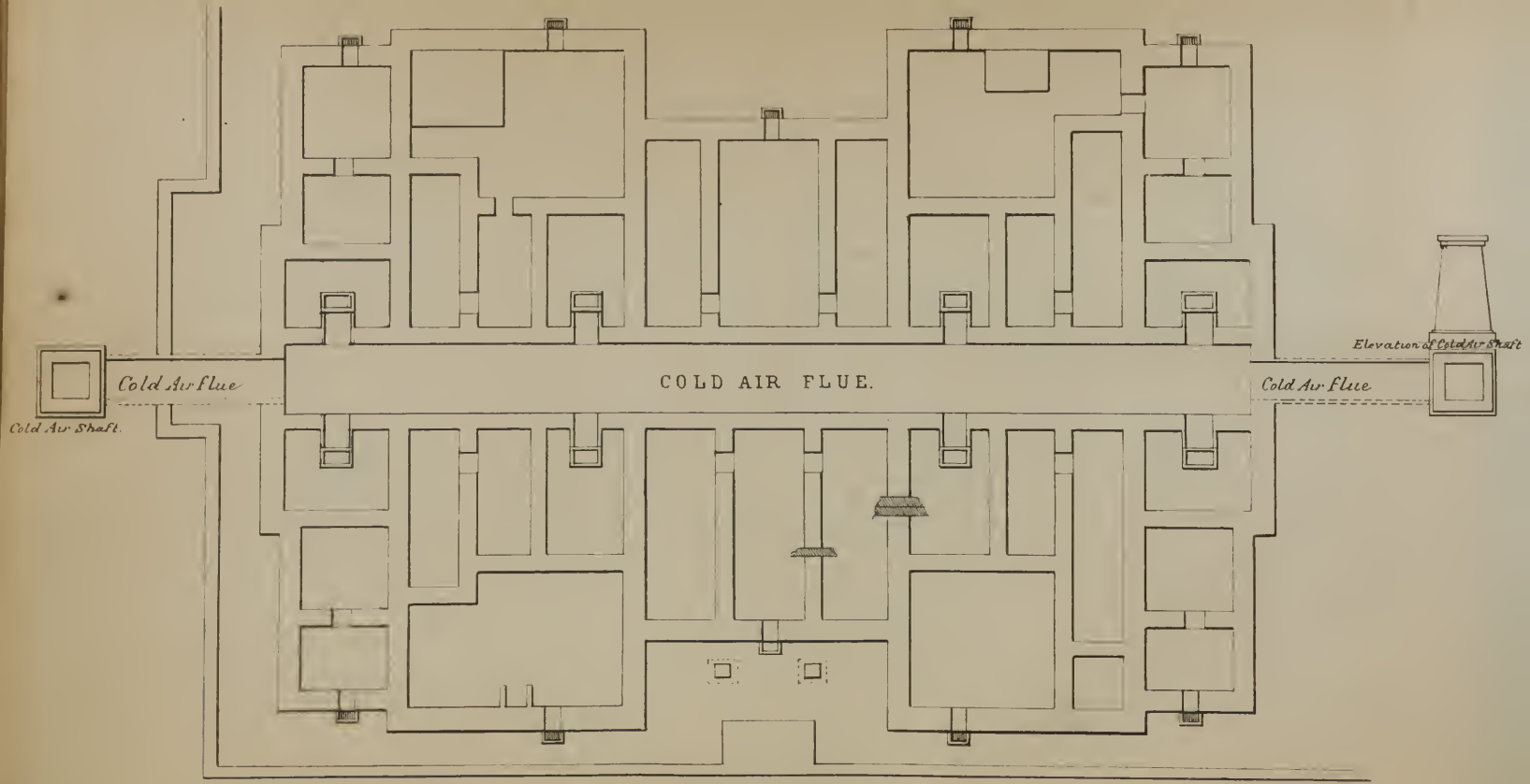
in the contrary direction; 3d, a hoistway and platform for raising the crippled and disabled patients from the basement floor to the several wards above; 4th, gas fixtures in every apartment; 5th, four water tanks of iron, holding in all about 3 ~~two~~ thousand gallons, placed in the attic, and supplied with water by a forcing-pump, worked by a small engine, which is placed in the furnace-room, more than a hundred feet from the building. The water, in two of these tanks, is kept constantly boiling by means of steam-pipes, which are placed within them. Each ward and private room of the house is, by means of these tanks, abundantly supplied with hot and cold water; and the general arrangement is such, that each ward may be wholly secluded from the rest, and may be said to constitute a complete infirmary within itself.

The surgical amphitheatre, in the centre of the upper story, towards the north, is lighted through the roof by a circular dome of glass, and by side windows opening to the north. The circular space within which the operating table rests, is surrounded with ranges of seats, rising from the floor, and by a circular gallery for similar seats above; and the whole apartment is so arranged as to furnish a perfect view of the operating table from every seat, and to accommodate about 250 persons.

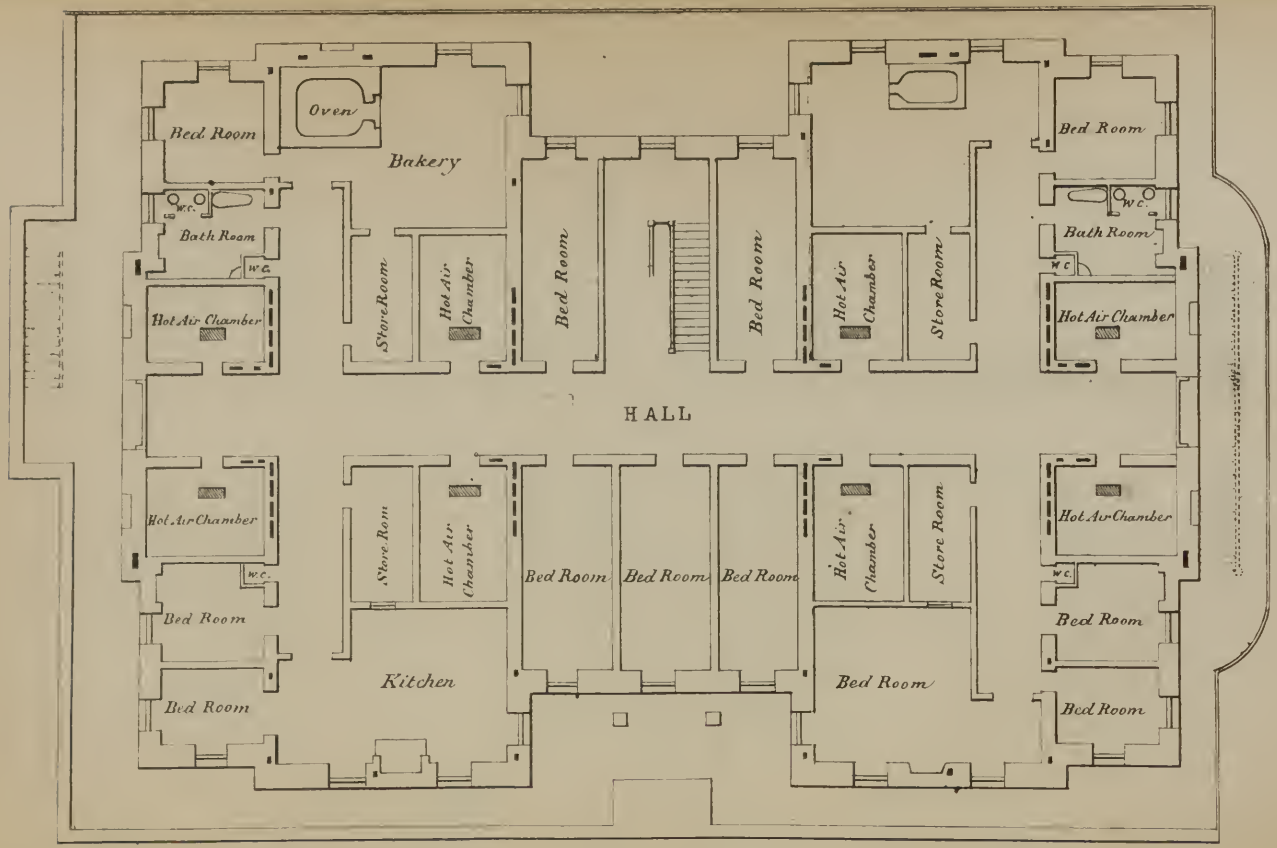
The building is of the most substantial materials. Its walls are of gneiss, from Westchester County, N. Y., and its total cost will vary but little from one hundred and fifty thousand dollars.

NORTH ELEVATION.

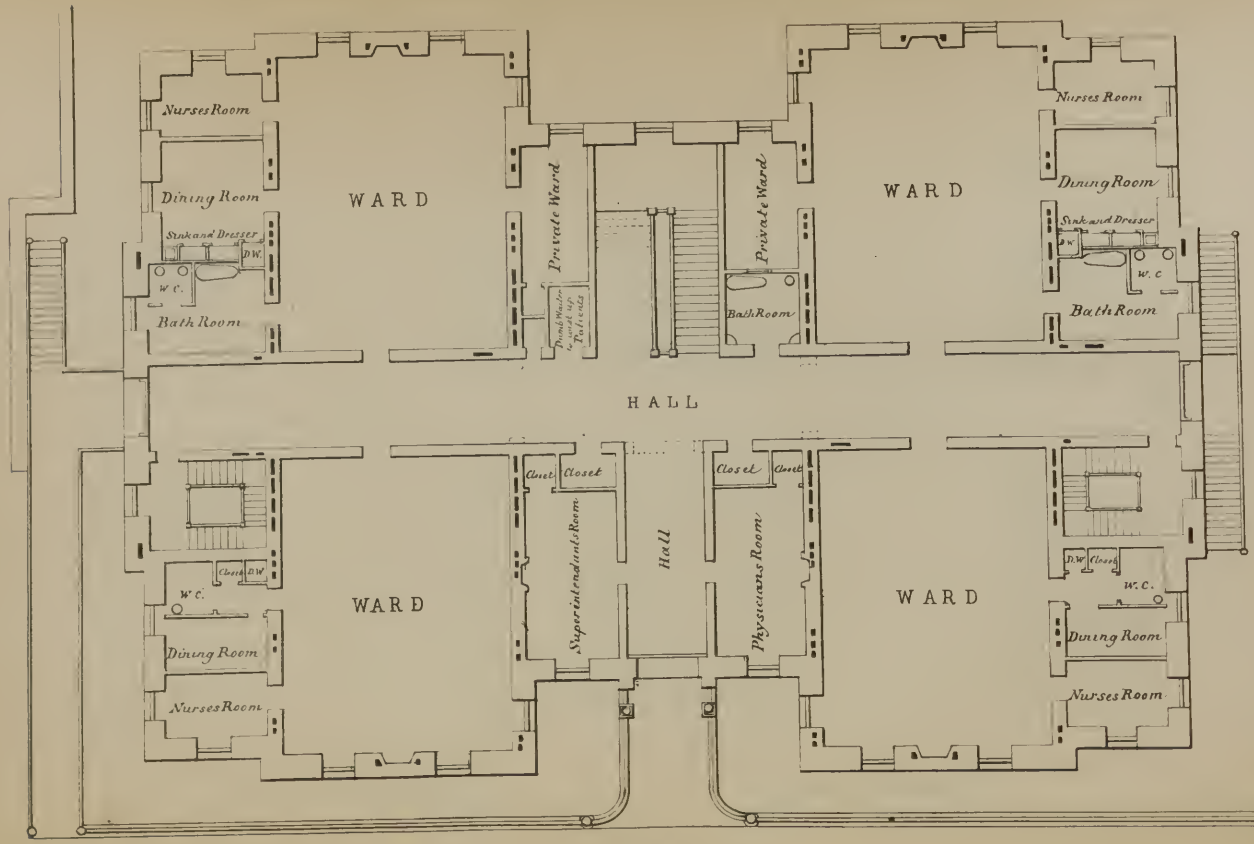
EAST ELEVATION.



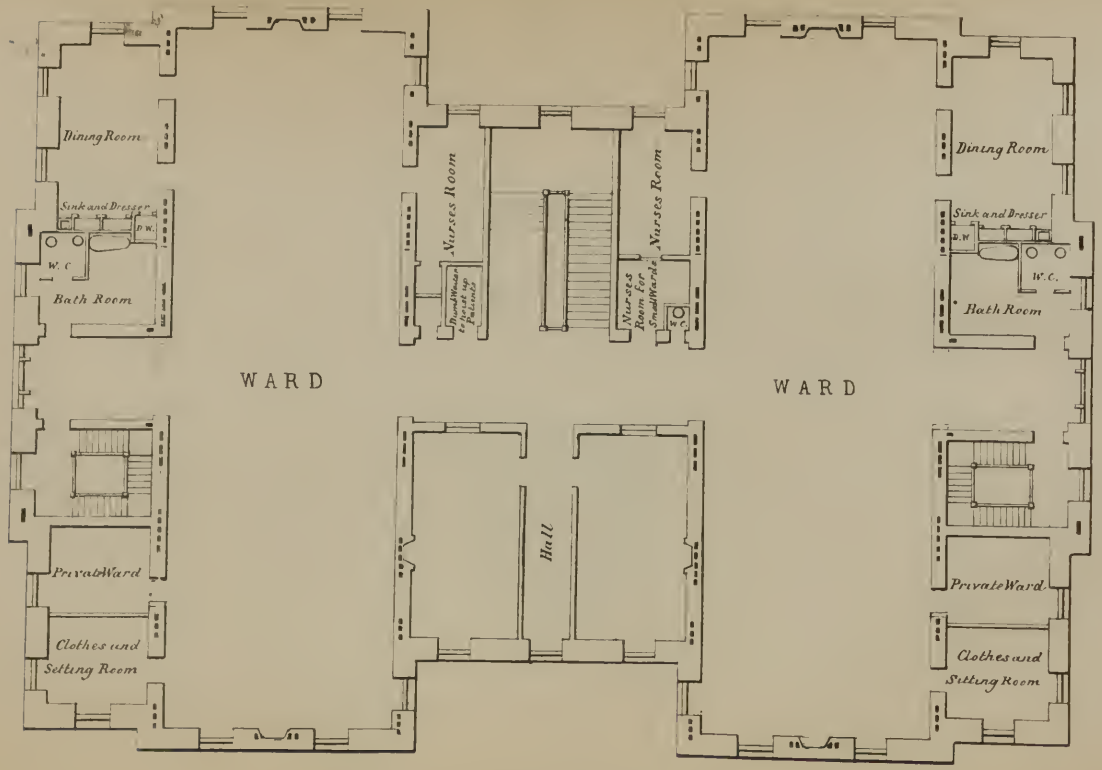
FOUNDATION PLAN.


Bed Room
Oven
Bakery
Bed Room
W.C.
Bath Room
W.C.
Hot Air Chamber
Store Room
Hot Air Chamber
Bed Room
Bed Room
Hot Air Chamber
Store Room
Bed Room
W.C.
Bath Room
W.C.
Hot Air Chamber
HALL
Hot Air Chamber
W.C.
Bed Room
Bed Room
Store Room
Hot Air Chamber
Bed Room
Bed Room
Bed Room
Hot Air Chamber
Store Room
Kitchen
Bed Room
Hot Air Chamber
W.C.
Bed Room
Bed Room

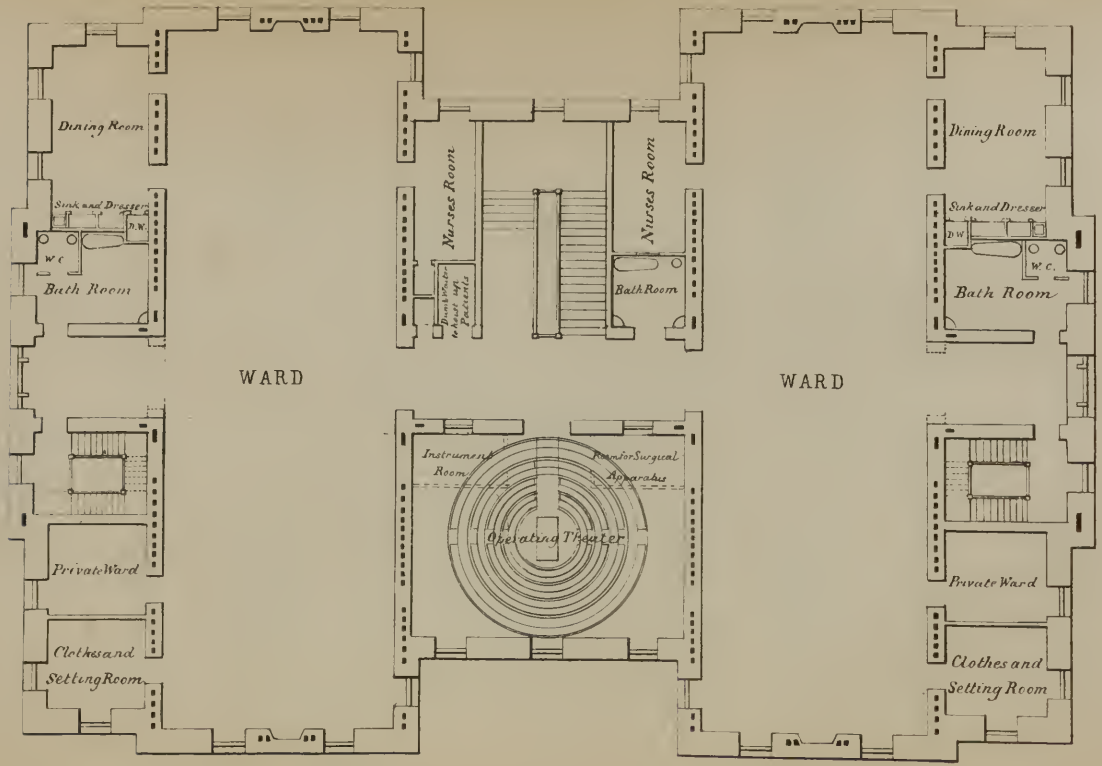
BASEMENT.


Nurses Room
Dining Room
Sink and Dresser
D.W.
W.C.
Bath Room
WARD
Private Ward
Private Ward
WARD
Nurses Room
Dining Room
Sink and Dresser
D.W.
W.C.
Bath Room
Bath Room
HALL
Closet
Closet
Closet
Closet
Superintendents Room
Hall
Physicians Room
WARD
WARD
D.W.
Closet
W.C.
Dining Room
Nurses Room
W.C.
Dining Room
Nurses Room

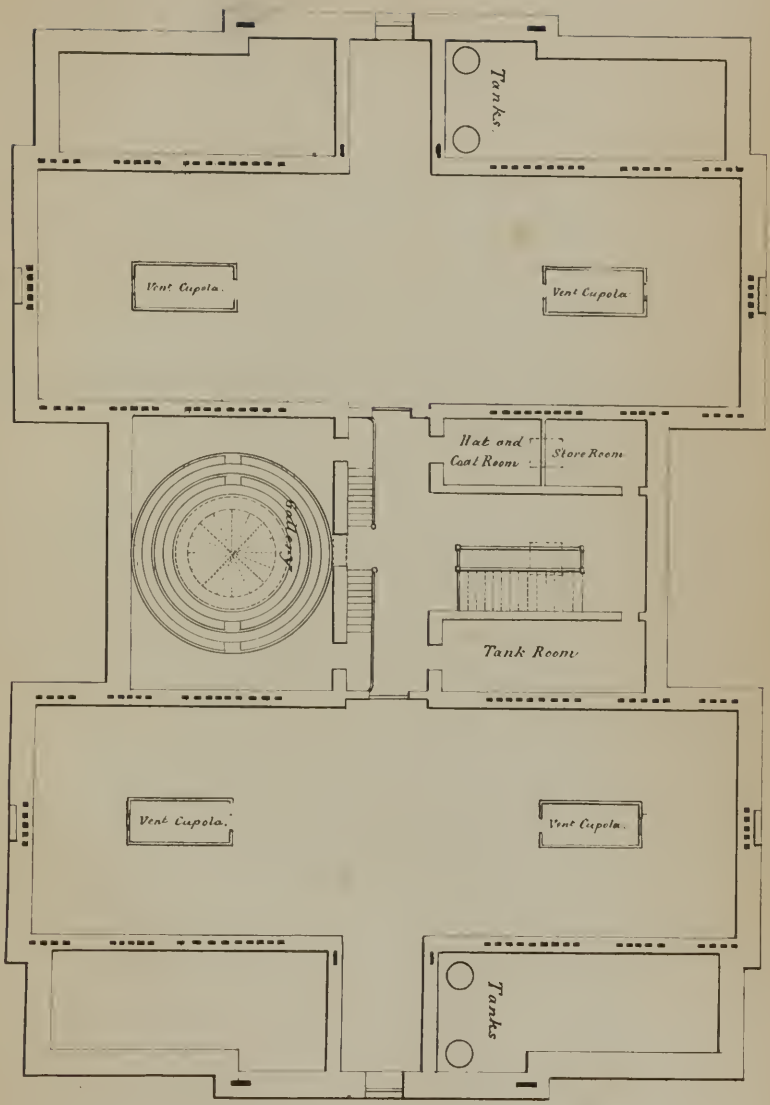
FIRST STORY.



SECOND AND THIRD STORIES.



FOURTH STORY.


Tanks.
Vent Cupola.
Vent Cupola.
Hat and
Coat Room
Store Room
Gallery
Tank Room
Vent Cupola.
Vent Cupola.
Tanks.

ATTIC PLAN.

AN

ADDRESS

DELIVERED ON THE

OCCASION OF THE INAUGURATION

OF THE

NEW SOUTH BUILDING

OF THE

NEW YORK HOSPITAL,

ON THE 18TH OF APRIL, 1855.

BY JOSEPH M. SMITH, M. D.,

SENIOR PHYSICIAN OF THE NEW-YORK HOSPITAL; PROFESSOR OF THE THEORY AND PRACTICE OF PHYSIC AND CLINICAL MEDICINE IN THE NEW-YORK COLLEGE OF PHYSICIANS AND SURGEONS,
&C., &C.

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